

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

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PCT

NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT

(PCT Rule 71.1)

Date of mailing  
(day/month/year)

21.06.2004

Applicant's or agent's file reference  
Case 21336

IMPORTANT NOTIFICATION

International application No.  
PCT/EP 03/07875 ✓

International filing date (day/month/year)  
18.07.2003 ✓

Priority date (day/month/year)  
26.07.2002 ✓

Applicant  
DSM IP ASSETS B.V.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed inventions is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the international  
preliminary examining authority:



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**PATENT COOPERATION TREATY**  
**PCT**  
**INTERNATIONAL PRELIMINARY EXAMINATION REPORT**  
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference Case 21336	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/EP 03/07875	International filing date ( <i>day/month/year</i> ) 18.07.2003	Priority date ( <i>day/month/year</i> ) 26.07.2002
International Patent Classification (IPC) or both national classification and IPC A23K1/16		
Applicant DSM IP ASSETS B.V.		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet:</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 1 sheets.</p>		
<p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"><li>I <input checked="" type="checkbox"/> Basis of the opinion</li><li>II <input type="checkbox"/> Priority</li><li>III <input checked="" type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li><li>IV <input type="checkbox"/> Lack of unity of invention</li><li>V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li><li>VI <input type="checkbox"/> Certain documents cited</li><li>VII <input type="checkbox"/> Certain defects in the international application</li><li>VIII <input type="checkbox"/> Certain observations on the international application</li></ul>		
Date of submission of the demand  06.02.2004	Date of completion of this report  21.06.2004	
Name and mailing address of the international preliminary examining authority:   European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70-340 - 3016	Authorized Officer  Koch, J  Telephone No. +31 70 340-4307	



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/EP 03/07875

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-12 as originally filed

**Claims, Numbers**

1-11 received on 21.05.2004 with letter of 17.05.2004

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).  
☐ the language of publication of the international application (under Rule 48.3(b)).  
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority in written form.  
☐ furnished subsequently to this Authority in computer readable form.  
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/EP 03/07875

**III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application,

☒ claims Nos. 10, 11

because:

☒ the said international application, or the said claims Nos. 10, 11 with respect to industrial applicability relate to the following subject matter which does not require an international preliminary examination (specify):

**see separate sheet**

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☐ no international search report has been established for the said claims Nos.

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the Standard.

☐ the computer readable form has not been furnished or does not comply with the Standard.

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	1-11
	No: Claims	
Inventive step (IS)	Yes: Claims	1-11
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-9
	No: Claims	

2. Citations and explanations

**see separate sheet**

**Re Item III**

**Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

Claims 10 and 11 relate to subject-matter considered by this Authority to be covered by the provisions of Rule 67.1(iv) PCT. Consequently, no opinion will be formulated with respect to the industrial applicability of the subject-matter of these claims (Article 34(4)(a)(I) PCT).

**Re Item V**

**Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

- 1) For the assessment of the present claims 9-11 on the question whether they are industrially applicable, no unified criteria exist in the PCT Contracting States. The patentability can also be dependent upon the formulation of the claims. The EPO, for example, does not recognize as industrially applicable the subject-matter of claims to the use of a compound in medical treatment, but may allow, however, claims to a known compound for first use in medical treatment and the use of such a compound for the manufacture of a medicament for a new medical treatment.
- 2) The document WO0000183 (D1), which has been identified as the closest prior art, discloses a composition comprising epigallocatechin gallate (EGCG), vitamin C, vitamin E and betacarotene (cf. example 14).
- 3.1) The subject-matter of claim 1 of the present application differs from D1 in that lactoferrin is included in the composition.
- 3.2) The subject-matter of claims 9 and 11 of the present application differs from D1 in that the combination of epigallocatechin gallate (EGCG), vitamin C, vitamin E and betacarotene is used for preventing plaque, gingivitis, periodontal disease and oral malodor in pets, and for enhancing the antioxidative capacity in the whole organism of the animal.
- 4) The problem to be solved by the present invention may therefore be regarded as (1.) the provision of a composition, which comprises EGCG and lactoferrin and is suitable for preventing or treating plaque, gingivitis, periodontal disease and oral

malodor in pets, and for enhancing the antioxidative capacity in the whole organism of the animal, as well as

(2.) the provision of an alternative medical use for the combination of EGCG, vitamins C & E and betacarotene, i.e. the use for preventing or treating plaque, gingivitis, periodontal disease and oral malodor in pets, and enhancing the antioxidative capacity in the whole organism of the animal.

- 5) The solution to the problems proposed in claims 1, 9 and 11 of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons:

Neither the use of

(1.) a composition comprising EGCG and lactoferrin, nor the use of

(2.) a combination of EGCG, vitamin C, vitamin E and betacarotene

for preventing or treating plaque, gingivitis, periodontal disease and oral malodor in pets, and for enhancing the antioxidative capacity in the whole organism of the animal is disclosed or suggested in the prior art.

- 6) Claims 2-8 and 10 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

What is claimed is:

1. A composition comprising epigallocatechin gallate (EGCG) and lactoferrin.
2. A composition as in claim 1 comprising additionally vitamin C, vitamin E and a carotenoid.
- 5        3. A composition as in any one of claims 1 or 2 comprising epigallocatechin gallate (EGCG) in a concentration of from about 0.001 to about 3 % (w/w) and lactoferrin in a concentration of from about 0.002 to 3 % (w/w).
4. A composition as in any one of claims 1 or 2 comprising vitamin C in a concentration of from about 30 to about 6000 mg/kg, vitamin E in a concentration of from  
10        about 20 to about 450 IU/kg and a carotenoid in a concentration of from about 2 to about 315 mg/kg, based on the total weight of the composition.
5. A composition as in any of claims 1 to 4 which is a pet food, particularly for dogs or cats.
6. The use of a composition of any one of claims 1 to 5 in the manufacture of a pet  
15        food, particularly for dogs or cats, for preventing or treating plaque, gingivitis, periodontal disease and oral malodor (halitosis) in pets, and for enhancing the antioxidative capacity in the whole organism.
7. The use as in claim 6 of a combination of EGCG and lactoferrin.
8. The use as in claim 6 of a combination of EGCG, lactoferrin, vitamin C, vitamin E  
20        and a carotenoid.
9. The use of a combination of EGCG, vitamin C, vitamin E and a carotenoid in the manufacture of a pet food, particularly for dogs or cats, for preventing or treating plaque, gingivitis, periodontal disease and oral malodor (halitosis) in pets, and for enhancing the antioxidative capacity in the whole organism.
- 25        10. The use of a composition or a pet food of any one of claims 1 to 5 for preventing or treating plaque, gingivitis, periodontal disease and oral malodor (halitosis) in pets, particularly dogs or cats, and for enhancing the antioxidative capacity in the whole organism of the animal.
11. The use of a combination of EGCG, vitamin C, vitamin E and a carotenoid for  
30        preventing or treating plaque, gingivitis, periodontal disease and oral malodor (halitosis) in pets, particularly dogs or cats, and for enhancing the antioxidative capacity in the whole organism of the animal.